

**ALABAMA HAZARDOUS WASTES MANAGEMENT AND MINIMIZATION ACT (AHWMMA)**  
**Compliance Evaluation Inspection (CEI) Report**

**Author of Report**

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Alabama Department of Environmental Management (ADEM)  
1400 Coliseum Boulevard  
Montgomery, AL 36110

**Facility Information**

**Outokumpu Stainless USA, LLC**  
1 Thyssen Krupp Drive  
Calvert, AL 36513  
EPA ID Number: ALR000047746  
NAICS Code: 331111, 331221, 332811 and 331112  
Website: [ HYPERLINK "http://www.outokumpu.com" ]

**Responsible Officials**

Mr. John Biggs, Director of Infrastructure  
Mrs. Michaela Shirley, Environmental Technician  
Mr. Parker Maners, Environmental Technician

**Inspection Participants**

Mr. Maners  
Mrs. Shirley  
Mr. Edmond Burks, EPA Region 4  
Mr. McMillian

**Date of Inspection**

4/16/ 2014

**Applicable Regulations**

ADEM Administrative Code Division 335-14, Hazardous Waste Program Regulations

**Purpose of Inspection**

The purpose of the inspection was to determine compliance with all applicable requirements of the Hazardous Waste Program regulations. This inspection was performed by personnel from the EPA Region 4 office and ADEM.

## **Facility Description**

Outokumpu Stainless (Outokumpu) is a manufacturer of stainless steel in various forms (coils, plates and sheets). The facility has the ability to produce a coil as thin as 22ga and as thick as 10ga. The Calvert, AL facility is one of four locations in the United States producing stainless steel for the company. This facility is the only location in the United States that produces a 72" wide stainless steel coil roll. Outokumpu opened for production in 2010 and has been ramping up production and adding processes since that time. As of February 26, 2014, the neighbouring facility of Thyssen Krupp Steel, which produces carbon steel, was purchased by ArcelorMittal and Nippon Steel & Sumitoma Metal Corp (AM/NS).

In its most recent notification of regulated waste activity (ADEM Form 8700-12, received at the Department on December 19, 2013), Outokumpu identified itself as a large quantity generator of hazardous waste.

## **Findings**

We arrived at the facility on March 17, 2014 at approximately 10:30 a.m. Mr. Biggs greeted us and served as the facility representative during the inspection. During the opening conference, we presented our identification and explained the purpose of the inspection. Mr. Biggs also introduced us to Mrs. Shirley and Mr. Maners, who would later provide a tour of the facility, during which time we would conduct the inspection.

The facility representatives provided the following description of the stainless steel process that progressed from scrap metal finished product:

- Scrap Metal Yard – scrap metal is received by barge and by truck;
- Stainless Steel Melt Shop (SSMS) – scrap metal is melted in the electric arc furnace (EAF); the melt is then taken to the Argon Oxygen Decarburization or AOD.
- AOD (Argon Oxygen Decarburization) – three steps occur in the AOD vessel that refines the melt;
- Decarburization – oxygen and argon are added to burn the carbon – this increases the temperature;
- Reduction – alloys are added; this step recovers oxidized chromium from the slag;
- Desulfurization – lime is added to dilute sulfur and the slag is removed from the vessel and the melt is tapped into the ladle; the ladle is moved to the Ladle Treatment Station or LTS;
- LTS (Ladle Treatment Station) – trimming alloys are added to the melt and sent to the caster or stirred and then sent to the caster;
- Caster – the melt is cast into slabs and sent to the slab yard for storage;
- Slab Yard – Outokumpu's stainless slabs are managed by AM/NS until needed, AM/NS then processes the slabs into coils and delivers the coils to the CB;
- Connection Bay (CB) – this is a holding area for coils received from AM/NS before being taken to the Hot Annealing Pickle Line or HAPL;
- HAPL (Hot Annealing Pickle Line) – a nitric (HNO<sub>3</sub>) and hydrofluoric acid (HF) bath, steam heated to 160° Fahrenheit, both anneals the slab and removes the oxide scale that results from casting or rolling operations; the slab is then moved to the Cold Roll Mill or CRM. Spent acid is piped to the acid regeneration plant or ARP;
  - CRM (Cold Roll Mill) – the annealed and clean slabs are processed on one of the three lines for producing 54-inch, 64-inch or 74-inch wide bands that are then rolled into coils before further processing;
  - Cold Annealing Pickle Line (CAPL) – the bands are uncoiled and cleaned again in a HNO<sub>3</sub> and HF bath before being sent to finishing, spent acid is piped to the ARP;
  - Finishing – this area includes cutting to length, slitting, polishing, depending on the specifications and warehousing of the finished products until shipment to the customer.

After the opening conference, Ms. Shirley and Mr. Maners accompanied us on an inspection tour of the facility. During the walk-through of the facility, we inspected the following areas:

**CRM:** The CRM maintenance area included the following:

- a used oil storage area containing a 250-gallon intermediate bulk container (IBC). The container was closed and labeled. No HW or used oil concerns were observed in the CRM maintenance area.

**CAPL:** The CAPL area included the following:

- Roll grinding shop – worn rollers from the roll mills are ground down to the next smaller roll size for continued use in the roll mills. The grinding process generates a fine material known as swarf. This area produces two kinds of swarf; one from the grinding of metal rollers is characteristic for chromium, and the other from grinding the hard rubber rollers is non-hazardous. The shop is equipped with five grinders; each grinder is connected to a filter process unit that filters the swarf onto roll fed filter paper. The filter paper containing the swarf is fed into a bin beneath the out feed of the unit. The roller grinding reuse process continues until a roll is too small to be ground to a size that can be used in the roll mill; the rolls are then recycled for scrap metal.

HW and Solid Waste Container Area – this area located, outside the roll grinding shop, included the following containers:

- A 25 cu/yd roll-off container labeled with the words “Hazardous Waste - RGS Grinding Swarf D007”. The roll-off was closed and labeled no areas of concern noted.

**SSMS:** The melt shop EAF, commissioned in November 2012 and was in operation at the time of inspection. In addition to the EAF, AOD, LMS, and the caster, the SSMS area included the following:

- The melt shop air emission control system pulls the exhaust gases directly from a canopy mounted over the EAF and from the AOD canopy. Each of the two systems consists of two parallel rows with six vertical filter hoppers in each row. The exhaust gases, depending on the temperature pass through draft coolers, are drawn into the negative pressure pulse jet system; the dust drops into the hoppers; the hoppers are emptied by a chain conveyor with wipers into a bucket elevator that empties the EAF dust (K061) into silos. The K061 is periodically emptied from the silos into pneumatic over-the-road trailers that are transported to INMETCO in Pennsylvania for recycling.

[INMETCO (EPA ID# PAD087561015), a subsidiary of Horsehead Holding Corporation, recycles waste from stainless steel mills including mill scale, swarf, and EAF dust.]

**ARP:** Spent acid (K062) is hard piped from the two pickling lines to the ARP. The ARP included the following:

- The mixed acid storage building contains three 16,000-gallon tanks that receive the pretreated K062. The acid in one of the tanks was being transferred to a tanker at the time of our inspection so we did not enter the area. It appears that Outokumpu’s records are detailed enough to demonstrate that the tanks are emptied every 90 days based on flow through (i.e., continuous flow or mass balance). The secondary containment for the tanks appeared to be adequate.
- The ARP roaster was down; repairs were being performed to correct a hose leak. The roaster has a capacity of 3.4 to 4.6 cubic meters per hour depending on the solid content of the K062.

The HW Storage Area (HWSA) for Containers (other than roll-off containers): the HWSA was located inside of a Conex container. The door to the HWSA was posted with a warning sign as well as the other approaches to the area. There were drums present in the area during the inspection. No areas of concern were noted in this area.

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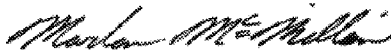
Following the tour of the facility, we returned to the conference room for the records review. All of the records required to be maintained by a large quantity generator were available for review. No areas of concern were noted.

### **Summary**

Based on the observations made during the walkthrough inspection of the facility and the review of relevant documents and records, Outokumpu appears to be as it described itself in its December 11, 2013 notification; a large quantity generator of hazardous waste, a small quantity handler of universal waste and a used oil generator.

After completion of the inspection, we met with Mr. Biggs to ask questions, review preliminary inspection results, and answer his questions. During the closing meeting, I prepared and then issued a Preliminary Inspection Report (ADEM form 19) to the facility. Mr. Biggs acknowledged receipt by signing the form. The "original" signed form was given to Mr. Brown for the facility's records and action. I departed the site at approximately 5:15pm.

### **Signed**



Compliance and Enforcement Section, Industrial Hazardous Waste Branch  
Land Division

**April 18, 2014**

Date

### **Concurrence**

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Clethes Stallworth, Chief  
Compliance and Enforcement Section, Industrial Hazardous Waste Branch  
Land Division

**April 18, 2014**

Date